AMENDMENTS TO THE CLAIMS

1. (**Currently Amended**) A high strength and high toughness magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), wherein said casting product has a hcp structured magnesium phase and a long period stacking ordered structure phase, wherein the hcp structured magnesium phase has an average particle diameter of 2 μm or more:

(1) $0.2 \leqq a \leqq 5.0$;

(2) $0.2 \leqq b \leqq 5.0$; and

(3) $0.5a\text{-}0.5 \leqq b$.

2. (**Withdrawn**) A high strength and high toughness magnesium alloy containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3):

(1) $0.2 \leqq a \leqq 3.0$;

(2) $0.2 \leqq b \leqq 5.0$; and

(3) $2a\text{-}3 \leqq b$.

3. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 1 comprising said casting product to which a plastic working is subjected.

4. (**Currently Amended**) A high strength and high toughness magnesium alloy comprising a plastically worked product which is produced by preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), and subjecting said magnesium alloy casting product to a plastic working, wherein said plastically worked product has a hcp structured magnesium phase and a long period stacking ordered structure phase at room temperature, wherein the hcp structured magnesium phase has an average particle diameter of 2 μm or more:

(1) $0.2 \leqq a \leqq 5.0$;

(2) $0.2 \leqq b \leqq 5.0$; and

(3) $0.5a\text{-}0.5 \leqq b$.

5. (**Withdrawn**) A high strength and high toughness magnesium alloy comprising a plastically worked product which is produced by preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), and subjecting said magnesium alloy casting product to a plastic working, wherein said plastically worked product has a hcp structured magnesium phase and a long period stacking ordered structure phase at room temperature:

(1) $0.2 \leqq a \leqq 3.0$;

(2) $0.2 \leqq b \leqq 5.0$; and

(3) $2a\text{-}3 \leqq b$.

6. (**Currently Amended**) A high strength and high toughness magnesium alloy comprising a plastically worked product which is produced by preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), and subjecting said magnesium alloy casting product to a plastic working and a heat treatment, wherein said plastically worked product has a hcp structured magnesium phase and a long period stacking ordered structure phase at room temperature, wherein the hcp structured magnesium phase has an average particle diameter of 2 μm or more:

(1) $0.2 \leqq a \leqq 5.0$;

(2) $0.2 \leqq b \leqq 5.0$; and

(3) $0.5a\text{-}0.5 \leqq b$.

7. (**Original**) A high strength and high toughness magnesium alloy comprising a plastically worked product which is produced by preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the

group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), and subjecting said magnesium alloy casting product to a plastic working and a heat treatment, wherein said plastically worked product has a hcp structured magnesium phase and a long period stacking ordered structure phase at room temperature:

(1) $0.2 \leqq a \leqq 3.0$;

(2) $0.2 \leqq b \leqq 5.0$; and

(3) $2a-3 \leqq b$.

8. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 4 or claim 6, wherein said long period stacking ordered structure phase has at least single-digit smaller dislocation density than said hcp structured magnesium phase.

9. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 4 or claim 6, wherein said long period stacking ordered structure phase has a crystal grain having a volume fraction of 5% or more.

10. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 4 or claim 6, wherein said plastically worked product has at least one kind of precipitation selected from the group consisting of a compound of Mg and rare-earth element, a compound of Mg and Zn, a compound of Zn and rare-earth element and a compound of Mg, Zn and rare-earth element.

11. (**Original**) A high strength and high toughness magnesium alloy according to claim 10, wherein said at least one kind of precipitation has a total volume fraction of larger than 0 to 40% or less.

12. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 4 or claim 6, wherein said plastic working is carried out by at least one process in a rolling, an extrusion, an ECAE working, a drawing, a forging, a press, a form rolling, a bending, a FSW working and a cyclic working of theses workings.

13. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 4 or claim 6, wherein a total strain amount when said plastic working is carried out is 15 or less.

14. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 4 or claim 6, wherein a total strain amount when the plastic working is carried out is 10 or less.

15. (**Withdrawn**) A high strength and high toughness magnesium alloy according to any one of claims 1, 2 or 4-7, wherein Mg contains y atomic% of at a total amount of Y and/or Gd, wherein "y" satisfies the following expressions (4) and (5),

(4) $0 \leqq y \leqq 4.8$ and

(5) $0.2 \leqq b+y \leqq 5.0$.

16. (**Withdrawn**) A high strength and high toughness magnesium alloy according to any one of claims 1, 2 or 4-7, wherein Mg contains "c" atomic%, in a total amount, of at least one element selected from the group consisting of Yb, Tb, Sm and Nd, wherein "c" satisfies the following expressions (4) and (5):

(4) $0 \leqq c \leqq 3.0$; and,

(5) $0.2 \leqq b+c \leqq 6.0$.

17. (**Withdrawn**) A high strength and high toughness magnesium alloy according to any one of claims 1, 2 or 4-7, wherein Mg contains "c" atomic%, in a total amount, of at least one element selected from the group consisting of La, Ce, Pr, Eu and Mm, wherein "c" satisfy the following expressions (4) and (5):

(4) $0 \leqq c \leqq 3.0$; and

(5) $0.2 \leqq b+c \leqq 6.0$.

18. (**Withdrawn**) A high strength and high toughness magnesium alloy according to any one of claims 1, 2 or 4-7, wherein Mg contains "c" atomic%, in a total amount, of at least one element

selected from the group consisting of Yb, Tb, Sm and Nd and "d" atomic%, in a total amount, of at least one element selected from the group consisting of La, Ce, Pr, Eu and Mm, wherein "c" and "d" satisfies the following expressions (4) to (6):

(4) $0 \leqq c \leqq 3.0$;

(5) $0 \leqq d \leqq 3.0$; and

(6) $0.2 \leqq b+c+d \leqq 6.0$.

19. **(Currently Amended)** A high strength and high toughness magnesium alloy casting product comprising "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), wherein said casting product has a hcp structured magnesium phase and a long period stacking ordered structure phase, wherein the hcp structured magnesium phase has an average particle diameter of 2 μm or more:

(1) $0.1 \leqq a \leqq 5.0$;

(2) $0.5 \leqq b \leqq 5.0$; and

(3) $0.5a-0.5 \leqq b$.

20. **(Withdrawn)** A high strength and high toughness magnesium alloy comprising "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3):

(1) $0.1 \leqq a \leqq 3.0$;

(2) $0.1 \leqq b \leqq 5.0$; and

(3) $2a-3 \leqq b$.

21. **(Previously Presented)** A high strength and high toughness magnesium alloy according to claim 19 comprising a magnesium alloy casting product to which a plastic working after cutting is subjected.

22. **(Currently Amended)** A high strength and high toughness magnesium alloy comprising a plastically worked product which is produced by preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), cutting said magnesium alloy casting product to form a chip-shaped casting product and then solidifying said chip-shaped casting product by a plastic working, wherein said plastically worked product has a hcp structured magnesium phase and a long period stacking ordered structure phase at room temperature, wherein the hcp structured magnesium phase has an average particle diameter of 2 μm or more:

(1) $0.1 \leqq a \leqq 5.0$:

(2) $0.1 \leqq b \leqq 5.0$: and

(3) $0.5a\text{-}0.5 \leqq b$.

23. **(Withdrawn)** A high strength and high toughness magnesium alloy comprising a plastically worked product which is produced by preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), cutting said magnesium alloy casting product to form a chip-shaped casting product and then solidifying said chip-shaped casting product by a plastic working, wherein said plastically worked product has a hcp structured magnesium phase and a long period stacking ordered structure phase at room temperature:

(1) $0.1 \leqq a \leqq 3.0$;

(2) $0.1 \leqq b \leqq 5.0$; and

(3) $2a\text{-}3 \leqq b$.

24. **(Currently Amended)** A high strength and high toughness magnesium alloy comprising a plastically worked product which is produced by preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), cutting said magnesium alloy casting product to form a chip-

shaped casting product and then solidifying said chip-shaped casting product by a plastic working and a heat treatment, wherein said plastically worked product has a hcp structured magnesium phase and a long period stacking ordered structure phase at room temperature, wherein the hcp structured magnesium phase has an average particle diameter of 2 μm or more:

(1) $0.1 \leqq a \leqq 5.0$;

(2) $0.1 \leqq b \leqq 5.0$; and

(3) $0.5a\text{-}0.5 \leqq b$.

25. (**Withdrawn**) A high strength and high toughness magnesium alloy comprising a plastically worked product which is produced by preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), cutting said magnesium alloy casting product to form a chip-shaped casting product and then solidifying said chip-shaped casting product by a plastic working and a heat treatment, wherein said plastically worked product has a hcp structured magnesium phase and a long period stacking ordered structure phase at room temperature:

(1) $0.1 \leqq a \leqq 3.0$;

(2) $0.1 \leqq b \leqq 5.0$; and

(3) $2a\text{-}3 \leqq b$.

26. (**Cancelled**)

27. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 22 or claim 24, wherein said long period stacking ordered structure phase has at least single-digit smaller dislocation density than said hcp structured magnesium phase.

28. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 22 or claim 24, wherein said long period stacking ordered structure phase has a crystal grain having a volume fraction of 5% or more.

29. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 22 or claim 24, wherein said plastically worked product contains at least one kind of precipitation selected from the group consisting of a compound of Mg and rare-earth element, a compound of Mg and Zn, a compound of Zn and rare-earth element and a compound of Mg, Zn and rare-earth element.

30. (**Original**) A high strength and high toughness magnesium alloy according to claim 29, wherein said at least one kind of precipitation has a total volume fraction of larger than 0 to 40% or less.

31. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 22 or claim 24, wherein said plastic working is carried out by at least one process in a rolling, an extrusion, an ECAE working, a drawing, a forging, a press, a form rolling, a bending, a FSW working and a cyclic working of theses workings.

32. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 22 or claim 24, wherein a total strain amount when said plastic working is carried out is 15 or less.

33. (**Previously Presented**) A high strength and high toughness magnesium alloy according to claim 22 or claim 24, wherein a total strain amount when said plastic working is carried out is 10 or less.

34. (**Withdrawn**) A high strength and high toughness magnesium alloy according to any one of claims 19, 20 or 22-25, wherein Mg contains "y" atomic%, in a total amount, of Y and/or Gd, wherein "y" satisfies the following expressions (4) and (5):

(4) $0 \leqq y \leqq 4.9$; and

(5) $0.1 \leqq b+y \leqq 5.0$.

35. **(Withdrawn)** A high strength and high toughness magnesium alloy according to any one of claims 19, 20 or 22-25, wherein Mg contains "c" atomic%, in a total amount, of at least one element selected from the group consisting of Yb, Tb, Sm and Nd, wherein "c" satisfies the following expressions (4) and (5):

(4) $0 \leqq c \leqq 3.0$; and

(5) $0.1 \leqq b+c \leqq 6.0$.

36. **(Withdrawn)** A high strength and high toughness magnesium alloy according to any one of claims 19, 20 or 22-25, wherein Mg contains "c" atomic%, in a total amount, of at least one element selected from the group consisting of La, Ce, Pr, Eu and Mm, wherein "c" satisfies the following expressions (4) and (5):

(4) $0 \leqq c \leqq 3.0$; and

(5) $0.1 \leqq b+c \leqq 6.0$.

37. **(Withdrawn)** A high strength and high toughness magnesium alloy according to any one of claims 19, 20 or 22-25, wherein Mg contains "c" atomic%, in a total amount, of at least one element selected from the group consisting of Yb, Tb, Sm and Nd and "d" atomic%, in a total amount, of at least one element selected from the group consisting of La, Ce, Pr, Eu and Mm, wherein "c" and "d" satisfy the following expressions (4) to (6):

(4) $0 \leqq c \leqq 3.0$;

(5) $0 \leqq d \leqq 3.0$; and

(6) $0.1 \leqq b+c+d \leqq 6.0$.

38. **(Previously Presented)** A high strength and high toughness magnesium alloy according to any one of claims 1, 4, 6, 19, 22 or 24, wherein Mg contains larger than 0 atomic% to 2.5 atomic% or less, in a total amount, of at least one element selected from the group consisting of Al, Th, Ca, Si, Mn, Zr, Ti, Hf, Nb, Ag, Sr, Sc, B, C, Sn, Au, Ba, Ge, Bi, Ga, In, Ir, Li, Pd, Sb and V.

39. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy comprising;

a step for preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), and

a step for producing a plastically worked product by subjecting said magnesium alloy casting product to a plastic working:

(1) $0.2 \leqq a \leqq 5.0$;

(2) $0.2 \leqq b \leqq 5.0$; and

(3) $0.5a\text{-}0.5 \leqq b$.

40. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy comprising;

a step for preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3), and

a step for producing a plastically worked product by subjecting said magnesium alloy casting product to a plastic working:

(1) $0.2 \leqq a \leqq 3.0$;

(2) $0.5 \leqq b \leqq 5.0$; and

(3) $2a\text{-}3 \leqq b$.

41. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy according to claim 39 or claim 40, wherein said magnesium alloy casting product has a hcp structured magnesium phase and a long period stacking ordered structure phase.

42. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy according to claim 39 or 40, wherein Mg contains "c" atomic%, in a total amount, of at least one

element selected from the group consisting of Yb, Tb, Sm and Nd, wherein "c" satisfies the following expressions (4) and (5):

(4) $0 \leqq c \leqq 3.0$; and

(5) $0.2 \leqq b+c \leqq 6.0$.

43. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy according to claim 40, wherein Mg contains "c" atomic%, in a total amount, of at least one element selected from the group consisting of La, Ce, Pr, Eu, Mm and Gd, wherein "c" satisfies the following expressions (4) and (5):

(4) $0 \leqq c \leqq 3.0$; and

(5) $0.2 \leqq b+c \leqq 6.0$.

44. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy according to claim 39 or 40, wherein Mg contains "c" atomic%, in a total amount, of at least one element selected from the group consisting of Yb, Tb, Sm and Nd and "d" atomic%, in a total amount, of at least one element selected from the group consisting of La, Ce, Pr, Eu, Mm and Gd, wherein "c" and "d" satisfy the following expressions (4) to (6):

(4) $0 \leqq c \leqq 3.0$;

(5) $0 \leqq d \leqq 3.0$; and

(6) $0.2 \leqq b+c+d \leqq 6.0$.

45. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy comprising:

a step for preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3);

a step for producing a chip-shaped casting product by cutting said magnesium alloy casting product; and

a step for producing a plastically worked product by solidifying said chip-shaped casting product by a plastic working:

(1) $0.1 \leqq a \leqq 5.0$;

(2) $0.1 \leqq b \leqq 5.0$; and

(3) $0.5a\text{-}0.5 \leqq b$.

46. (**Withdrawn**) A method of producing a high strength and high toughness magnesium alloy comprising:

a step for preparing a magnesium alloy casting product containing "a" atomic% of Zn, "b" atomic%, in a total amount, of at least one element selected from the group consisting of Dy, Ho and Er and a residue of Mg, wherein "a" and "b" satisfy the following expressions (1) to (3);

a step for producing a chip-shaped casting product by cutting said magnesium alloy casting product; and

a step for producing a plastically worked product by solidifying said chip-shaped casting product by a plastic working:

(1) $0.1 \leqq a \leqq 3.0$;

(2) $0.1 \leqq b \leqq 5.0$; and

(3) $2a\text{-}3 \leqq b$.

47. (**Currently Amended - Withdrawn**) A method of producing a high strength and high toughness magnesium alloy according to ~~claim 46 or claim 47~~claim 45 or claim 46, wherein said magnesium alloy casting product has a hcp structured magnesium phase and a long period stacking ordered structure phase.

48. (**Withdrawn**) A method of producing a high strength and high toughness magnesium alloy according to claim 45 or 46, wherein Mg contains "c" atomic%, in a total amount, of at least one element selected from the group consisting of Yb, Tb, Sm and Nd, wherein "c" satisfies the following expressions (4) and (5):

(4) $0 \leqq c \leqq 3.0$; and

(5) $0.1 \leqq b+c \leqq 6.0$.

49. (**Withdrawn**) A method of producing a high strength and high toughness magnesium alloy according to claim 45 or 46, wherein Mg contains "c" atomic%, in a total amount, of at least one

element selected from the group consisting of La, Ce, Pr, Eu, Mm and Gd, wherein "c" satisfies the following expressions (4) and (5):

(4) $0 \leqq c \leqq 3.0$; and

(5) $0.1 \leqq b+c \leqq 6.0$.

50. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy according to claim 45 or 46, wherein Mg contains "c" atomic%, in a total amount, of at least one element selected from the group consisting of Yb, Tb, Sm and Nd and "d" atomic%, in a total amount, of at least one element selected from the group consisting of La, Ce, Pr, Eu, Mm and Gd, wherein "c" and "d" satisfy the following expressions (4) to (6):

(4) $0 \leqq c \leqq 3.0$;

(5) $0 \leqq d \leqq 3.0$; and

(6) $0.1 \leqq b+c+d \leqq 6.0$.

51. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy according to any one of claims 39, 40, 45 or 46, wherein Mg contains larger than 0 atomic% to 2.5 atomic% or less, in a total amount, of at least one element selected from the group consisting of Al, Th, Ca, Si, Mn, Zr, Ti, Hf, Nb, Ag, Sr, Sc, B, C, Sn, Au, Ba, Ge, Bi, Ga, In, Ir, Li, Pd, Sb and V.

52. **(Withdrawn)** A method of producing a the high strength and high toughness magnesium alloy according to any one of claims 39, 40, 45 or 46, wherein said plastic working is carried out by at least one process in a rolling, an extrusion, an ECAE working, a drawing, a forging, a press, a form rolling, a bending, a FSW working and a cyclic working of theses workings.

53. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy according to any one of claims 39, 40, 45 or 46, wherein a total strain amount when said plastic working is carried out is 15 or less.

54. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy according to any one of claims 39, 40, 45 or 46, wherein a total strain amount when said plastic working is carried out is 10 or less.

55. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy according to any one of claims 39, 40, 45 or 46 comprising a step for heat-treating said plastically worked product after said step for producing said plastically worked product.

56. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy according to claim 55, wherein said heat treatment is carried out under a condition of a temperature of 200°C to less than 500°C and a treating period of 10 minutes to less than 24 hours.

57. **(Withdrawn)** A method of producing a high strength and high toughness magnesium alloy according to any one of claims 39, 40, 45 or 46, wherein said magnesium alloy after subjecting to said plastic working has said hcp structured magnesium phase having single-digit larger dislocation density than a long period stacking ordered structure phase.